NATURAL RESOURCES MANAGEMENT PLAN

MANAGEMENT PROGRAM

AN ADDENDUM TO

the

NATURAL RESOURCES MANAGEMENT PLAN

for

LAKE MEAD NATIONAL RECREATION AREA
Arizona/Nevada

REVISION OF MAY 1985

UNITED STATES DEPARTMENT OF THE INTERIOR

NATIONAL PARK SERVICE

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NATURAL RESOURCES MANAGEMENT PROGRAM

ABSTRACT

This Management Program is a reference document for use in carrying out key identified natural resources projects within Lake Mead National Recreation Area. While the Natural Resources Management Plan for Lake Mead proposes a long-term action program, this Management Program deals with the next five years only. The Program proposes projects for Fiscal Years 1985 through 1989. Annually, the Management Program will be reviewed and updated for a new five-year period as work is completed, new projects are proposed and priorities and funding conditions change.

The Management Program presented on the subsequent pages of this document consists of:

1. Natural Resources Project Programming Sheets listing each projects' priority, requested funds and time schedule for a five-year period.

2. Natural Resources Project Statements. These serve as "blueprints" for proposed actions.

3. Status List of Natural Resources Projects. This list summarizes completed monitoring and research projects at the recreation area.

A Service team from Lake Mead and the Western Regional Office worked with Consultant Russ Grater in completing a Natural Resources Management Plan and Environmental Assessment for Lake Mead in June 1975. That plan included an Addendum, the Management Program. This May 1985 edition represents the third revision of the original Management Program. This revision proposes that six additional projects be carried out at Lake Mead. These proposals are outlined in the following project statements:

1. N-21 Geologic Map Compilation
2. RM-14 Natural Resources Management Specialist
3. N-22 Wintering Bald Eagle Perch/Roost Survey
4. RM-11 Burro Removal from Cottonwood Cove/Echo Bay
5. RM-12 Construction of Fence and Cattleguard (Echo Bay)
6. RM-13 Construction of Fence and Cattleguard (Newberry Mountains)

Harry E. Penney for

Jerry D. Wagers
Superintendent

June 3 1985
Date

Howard H. Chapman

Howard Chapman
Regional Director, Western Region

7-27-85
Date

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Proj No.	Project Title ON-GOING	Proj Type	RMP Pri	Park Pri	10-237 No.	10-238 No.	Five Year Program Costs (in $1000) and Fund Sources Yr 1 Funded/New	 Yr 2 Funded/New	 Yr 3 Funded/New	 Yr 4 Funded/New	 Yr 5 Funded/New
	Off-road Rehabilitation and Environmental Protection	MIT	-	-			49.0(PB) 0	49.0(PB) 0	60.0(PB) 0	60.0(PB) 0	60.0(PB) 0
	Mineral Management Monitoring	MON	-	-			2.0(PB) 0	2.0(PB) 0	4.0(PB) 0	4.0(PB) 0	4.0(PB) 0
	Water Resources Management Plan	MIT	-	-			1.0(PB) 0	0 0	0 0	0 0	0 0
	Wintering Bald Eagle Survey	MON	-	-			1.2 0	1.2 0	1.2 0	1.2 0	1.2 0
	Mineral Management Plan	MIT	-	-			3.0(PB) 0	1.0(PB) 0	0 0	0.5(PB) 0	0 0
	Fire Management Plan	MIT	-	-			2.0(PB) 0	0 0	0 0	0 0	0 0
	River Mountains Bighorn Sheep Trap-Transplant Project	MIT	-	-			2.5(PB) 0	0 0	0 0	0 0	0 0
	Black Mountains Bighorn Sheep Trap-Transplant Project	MIT	-	-			2.0(PB) 0	2.0(PB) 0	0 0	2.0(PB) 0	0 0

NOTES: 1/ Natural Resources project types are: MIT = Mitigation, MON = Monitoring, RES = Research

2/ Fund Sources should be shown in parenthesis after costs as follows: PB = Park Base, RNR - Regionwide Natural Resources Base, NRP = Servicewide Natural Resource Preservation Account, AQ = Servicewide Air Quality Account, AP = Servicewide Acid Precipitation Account, WR = Servicewide Water Resources Account

Proj No.	Project Title ONGOING	Proj Type	RMP Pri	Park Pri	10-237 No.	10-238 No.	Five Year Program Costs (in $1000) and Fund Sources Yr 1 Funded/New	Yr 2 Funded/New	Yr 3 Funded/New	Yr 4 Funded/New	Yr 5 Funded/New
N-20	Off-road Rehabilitation Experimental Project	RES	-	-			8.0(PB) / 0	0 / 0	0 / 0	0 / 0	0 / 0
RM-10	Air Quality Monitoring Lower Colorado Basin	MON	-	-			2.0(PB) / 0	2.0(PB) / 0	2.0(PB) / 0	2.0(PB) / 0	2.0(PB) / 0
	Geographical Inventory System	MIT	-	-			0.5(PB) / 0	0.5(PB) / 0	0 / 0	0 / 0	0 / 0
RM-3	Biological Control of Mosquito Populations	MIT	-	-			0.6(PB) / 0	0 / 0	0.6(PB) / 0	0 / 0	0 / 0
N-3	Analysis of Bighorn Populations and Distribution in LAME	RES	2	30	84-37		**5.0(PB) / 0	15.0(PB) / 0	15.0(PB) / 0	10.0(PB) / 0	0 / 0

**N-3, The funding for this project has been verbally committed by the Chief Scientist and is shown here as Park Base funding as per that verbal agreement.

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Programming Sheet

Proj No.	Project Title PROPOSED	Proj Type	RMP Pri	Park Pri	10-237 No.	10-238 No.	Five Year Program Costs (in $1000) and Fund Sources Yr 1 Funded/New	Yr 2 Funded/New	Yr 3 Funded/New	Yr 4 Funded/New	Yr 5 Funded/New
RM-14	Natural Resources Management Specialist (From Trainee Program)	MIT	1	4	84-31		0/0	0/0	0/36.0(PB)	*0/	0
N-18	Analysis of Tamarisk Beach Encroachment and Recreation Impact	RES	2	35	84-38		0/12.0(RNR)	0/12.0(RNR)	0/0	0/0	0/0
N-11	Literature Review of Soils - Phase I	RES	3	36	84-39		0/10.0				
RM-11	Burro Removal From Cottonwood Cove and Echo Bay	MIT	4	40	84-46		0/0	0/20.0	0/0	0/0	0/0
RM-12	Construction of Fence and Cattleguard (Echo Bay Airstrip)	MIT	5	61		84-318	0/59.6(PB)	0/0	0/0	0/0	0/0
N-4	Basic Ecosystems	MIT	6		84-49		0/82.0(RNR)	0/82.0(RNR)	0/82.0(RNR)	0/0	0/0
N-21	Geologic Map Compilation	MIT	7	66		84-276	0/29.0(RNR)	0/40.0(RNR)	0/0	0/0	0/0

*RM-14 will become a full time position and for the purposes of this document is only shown in the year the position is receive

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Proj No.	Project Title PROPOSED	Proj Type	RMP Pri	Park Pri	10-237 No.	10-238 No.	Five Year Program Costs (in $1000) and Fund Sources Yr 1 Funded/New	Yr 2 Funded/New	Yr 3 Funded/New	Yr 4 Funded/New	Yr 5 Funded/New
RM-10	Monitor and Access Air Quality	MON	8				2.0(PB) / 11.0(AQ)	2.0(PB) / 11.0(AQ)	2.0(PB) / 11.0(AQ)	2.0(PB) / 11.0(AQ)	2.0(PB) / 11.0(AQ)
W-2	Monitor and Access Water Quality	MON	9				2.5(PB) / 47.5(WR)	2.5(PB) / 15.0(WR)	2.5(PB) / 15.0(WR)	2.5(PB) / 15.0(WR)	2.5(PB) / 15.0(WR)
N-22	Wintering Bald Eagle Perch/Roost Survey	RES	10				0 / 0	0 / 0	5.0(PB / 0	5.0(PB) / 0	5.0(PB) / 0
N-13	Warm Springs Inventory	RES	11				0 / 10.0(NRP)	0 / 10.0(NRP)	0 / 0	0 / 0	0 / 0
RM-13	Construction of Cattleguard and Fence (Boundary - Newberry Mtns.)	MIT	12	101		84-449	0 / 13.0(PB)	0 / 0	0 / 0	0 / 0	0 / 0
N-7	R.B.I. - Invertebrates	RES	13				0 / 28.0(RNR)	0 / 28.0(RNR)	0 / 28.0(RNR)	0 / 0	0 / 0
N-8	R.B.I. - Non Vascular	RES	14				0 / 17.0(RNR)	0 / 17.0(RNR)	0 / 17.0(RNR)	0 / 0	0 / 0
N-10	Study Effects of Grazing on Native Game Species and Plant Communities	RES	15				0 / 0	0 / 17.0(RNR)	0 / 17.0(RNR)	0 / 0	0 / 0

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Proj No.	Project Title PROPOSED	Proj Type	RMP Pri	Park Pri	10-237 No.	10-238 No.	Five Year Program Costs (in $1000) and Fund Sources Yr 1 Funded/New	Yr 2 Funded/New	Yr 3 Funded/New	Yr 4 Funded/New	Yr 5 Funded/New
N-14	Asiatic Clam Ecology	RES	16		Project Statement to be developed.						
RM-3	Control Puncture Vine	MIT	17				0 / 11.0(RNR)	0 / 2.5(PB)	0 / 0	0 / 0	0 / 0

NOTES: 1/ Natural Resources project types are: MIT = Mitigation, MON = Monitoring, RES = Research

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NATURAL RESOURCES PROJECT STATEMENT

1. PARK AND REGION: Lake Mead National Recreation Area - 8360, Western Region.

2. PROJECT NAME AND NUMBER: Geologic Map Compilation, N-21

3. STATEMENT OF PROBLEM: Lake Mead National Recreation Area contains portions of two major geologic provinces and the transition zone between them. The widely diversified structural, stratigraphic, geomorphic, and volcanic relationships are clearly exposed because of the scanty cover of plants. Park visitors cannot fully comprehend this basic natural resource which supports the areas ecosystems and scenic topography without adequate geologic maps of the area. Park managers are hampered in geologic interpretation without adequate maps and also need them for developing flash flood strategies and making evaluations concerning construction and mineral leasing. Ecologic studies and impact evaluations are also hampered by a lack of knowledge about the geology of the sites under study.

4. WHAT HAS BEEN DONE: As cited under Reference and Contacts, almost all of Lake Mead National Recreation Area has been geologically mapped. However, the maps differ widely in scale and other mapping standards, and are often available only in libraries and university geology departments.

5. DESCRIPTION OF WORK TO BE UNDERTAKEN: Existing map information will be collected and transferred to a topographic base with a scale of 1:48,000 so that they will mate with similar maps available for Grand Canyon National Park to the east of the recreation area. Where data exists the geologic maps will extend beyond the boundaries of the recreation area if space is available on the mapping sheet. Geologic information will be gathered in the field only for those areas that have not been mapped within the recreation area. For ease of handling and field use, the map sheet should each cover about 30 minutes of longitude and latitude. The finished maps will be printed through the Southwest Parks and Monuments Association and made available for sale to interested individuals, institutions and organizations.

6. LENGTH OF TIME NEEDED: The project should take no more than two years.

7. WHAT WILL HAPPEN IF PROJECT IS NOT UNDERTAKEN: Geologic information about Lake Mead National Recreation Area will remain fragmented and scattered and generally unavailable to managers, visitors and scientists. Interpretation of a basic resource, ecological studies, flash flood and construction evaluations will be hampered.

8. WHAT ARE THE ALTERNATIVES:

a. No action by allowing No. 7 to occur.

b. Obtain private funding, grants, donations, etc., through the Southwest Parks and Monuments Association and Universities.

c. Request the Geological Survey to fund and perform the project.

d. Begin in the east, fund the project in a piecemeal fashion over a ten or more year period.

9. PERSONNEL: One field Geologist familiar with the geology of the Lake Mead area and one geologic Cartographer.

10. ADMINISTRATION AND LOGISTICS: The project may be done through contract or by assignment from the Service or Geological Survey. Cartography can be contracted through the Denver Service Center.

FUNDING

	YEAR IN PROGRAM SEQUENCE				
	1st	2nd	3rd	4th	5th
Personal Services	20,000	25,000	-	-	-
Other than Personal Services	9,000	15,000	-	-	-
GRAND TOTAL	29,000	40,000	-	-	-
Funds Available in Park Base	-	-	-	-	-
Funds Requested from Regional Office	29,000	40,000	-	-	-

ON FORM DATE SUBMITTED

10-237 ☐

10-238 ☐

10-250 ☐

10-451 ☐

11. REFERENCES AND CONTACTS:

a. U. S. Geological Survey
b. Nevada Bureau of Mines and Geology
c. Bohannon, R. G., U. S. Geological Survey
d. Huntoon, Peter G., Department of Geology, University of Wyoming
e. O'Brian, Jack, Grand Canyon National History Association

Bohannon, R. G., and Anderson, R. E.:

1978 Preliminary geologic map of the Las Vegas 1° by 2° quadrangle, Nevada, Arizona and California. U. S. Geological Survey, open-file report 78-670, 12p., 1sh., scale 1:250,000.

Longwell, C. R.:

1963 Reconnaissance geology between Lake Mead and Davis Dam, Arizona-Nevada. U. S. Geological Survey, Prof. Paper 347-E, 51 p.

1936 Geology of the Boulder Reservoir Floor, Arizona-Nevada. Geol. Soc. Amer. Bull. v. 47, p. 1393-1476.

Lucchitta, Ivo.:

1966 Cenozoic geology of the upper Lake Mead area adjacent to the Grand Wash Cliffs, Arizona. PhD, Pennsylvania State University, 218 p.

Huntoon, Peter W., Billingsley, George H., and Clark, Malcom D.:

1981 Geologic map of the lower Granite Gorge and vicinity, Western Grand Canyon, Arizona. 1:48,000 scale. Grand Canyon Natural History Association, Grand Canyon, Arizona.

Anderson, R. E.:

1977 Geologic Map of the Boulder City 15-minute quadrangle, Clark County, Nevada. U. S. Geological Survey Geological Quadrangle Map GQ-1935.

1978 Geologic map of the Black Canyon 15-minute quadrangle, Clark County, Nevada. U. S. Geological Survey Geological Quadrangle Map GQ-1394.

The United States Geological Survey also has OF-78-670 which is a preliminary geologic map of the Garnet Mountain quadrangle and may have others of which we are not aware.

NATURAL RESOURCES PROJECT STATEMENT

1. PARK AND REGION: Lake Mead National Recreation Area - 8360, Western Region.

2. PROJECT NAME AND NUMBER: Natural Resources Management Specialist from Trainee Program. RM-14.

3. STATEMENT OF PROBLEM: The Lake Mead National Recreation Area is approximately 1,500,000 acres in size and contains one of the largest and most significant Desert Bighorn Sheep populations within the United States. The park has cooperative agreements with the Bureau of Land Management, Nevada Department of Wildlife and Arizona Game and Fish Department to manage bighorn sheep and burros, but no one on the staff has the scientific background and knowledge to discuss scientific aspects of herd dynamics, study results, etc., with research personnel of the cooperating agencies. Because of the office workload for available staff, there is no one available to monitor bighorn sheep population densities, trends, range use patterns, food habits, competition conflicts, etc.

A person with field research capabilities is needed to provide management with field data and information necessary to corroborate or refute data presented by other agencies.

A person is also needed to monitor endangered/threatened species, mineral leases, grazing and other natural resources.

4. WHAT HAS BEEN DONE: Temporary assignments of field personnel in visitor protection to the resource management office has helped accomplish some tasks.

5. DESCRIPTION OF WORK TO BE UNDERTAKEN: A Resources Management Specialist with a Wildlife Biologist background will do field monitoring of bighorn sheep populations, collecting data on numbers, distribution, trends, etc. This person will assist the Cooperative National Park Resources Studies Unit in the last two years of the "Analysis of Bighorn Populations and Distribution in LAME" research project and will continue the monitoring program set up by this project. He will also be responsible for carrying out independent studies on endangered species and other wildlife populations, along with grazing management responsibilities, documentation for NEPA compliance, minerals management monitoring etc. He will be involved with interagency programs including the Nevada Department of Wildlife, Arizona Game and Fish Department, U. S. Bureau of Reclamation, U. S. Bureau of Land Management, Environmental Protection Agency, and other state and county agencies with authority within the recreation Area.

7. WHAT WILL HAPPEN IF PROJECT IS NOT UNDERTAKEN: Many of the natural resources of Lake Mead National Recreation Area will continue to be neglected due to lack of manpower to carry out monitoring and field studies.

8. WHAT ARE THE ALTERNATIVES:

a. No Action. This alternative will result in conditions described in No. 7 above.

b. Add a Resources Management Specialist (Wildlife Biologist) to the staff. This will allow field studies and monitoring of natural resources to be carried out to an acceptable level at Lake Mead National Recreation Area.

9. PERSONNEL: One Resource Management Specialist with background in wildlife biology and research.

10. ADMINISTRATION AND LOGISTICS: One permanent FTE and funding to be added to park base in Fiscal Year 1987.

FUNDING

	YEAR IN PROGRAM SEQUENCE				
	1st	2nd	3rd	4th	5th
Personal Services	-	-	31,000	-	-
Other than Personal Services	-	-	5,000	-	-
GRAND TOTAL	-	-	36,000	-	-
Funds Available in Park Base	-	-	-	-	-
Funds Requested from Regional Office	-	-	36,000	-	-

ON FORM	DATE SUBMITTED
10-237 [X]	12-84
10-238 [ ]	
10-250 [ ]	
10-451 [ ]	

NATURAL RESOURCES PROJECT STATEMENT

1. PARK AND REGION: Lake Mead National Recreation Area - 8360, Western Region.

2. PROJECT NAME AND NUMBER: Wintering Bald Eagle Perch/Roost Survey N-22

3. STATEMENT OF PROBLEM: Wintering Bald Eagle surveys have shown as many as 18 bald eagles utilizing the recreation area during the winter months. Where the eagles roost for the night and where their favorite perches are during the day is unknown. This knowledge is needed for park planning and management, especially as it relates to development and facilities that will attract people. The eagles need to remain relatively isolated from high activity developed areas and protected from increased activity in the vicinity of their roosts and perches.

4. WHAT HAS BEEN DONE: Only winter eagle counts have given an indication of some possible perching sites. Nothing is known about roost sites.

5. DESCRIPTION OF WORK TO BE UNDERTAKEN: Surveys will be taken during the winter months for a three-year period to find roost sites and favorite or habitual perch sites. Utilization of boats, hiking, and possibly aircraft may be needed to locate these sites. The sites, when located, will be recorded on topographical maps and buffer areas identified to protect the site from recreational encroachment.

6. LENGTH OF TIME NEEDED: Four months per year for three years.

7. WHAT WILL HAPPEN IF POJECT IS NOT UNDERTAKEN: Roosting sites and perch sites will go unidentified and development planning may infringe on these areas. Wintering eagles would probably leave the area, and in cases of severe disruption, may not return the following winters.

8. WHAT ARE THE ALTERNATIVES:

a. No action. This alternative may result in planning and development impacts to wintering bald eagle populations.

b. Conduct a three-year survey for roost and perch sites. This alternative will locate roosting and perching sites and allow management to avoid developing these areas and thus avoid impacts to wintering populations.

9. PERSONNEL: One Wildlife Biologist.

10. ADMINISTRATION AND LOGISTICS: The Resource Management Specialist (Wildlife Biologist) that will be added to the staff in 1987 will conduct this survey using park funds.

FUNDING

	YEAR IN PROGRAM SEQUENCE				
	1st	2nd	3rd	4th	5th
Personal Services	-	-	4,000	4,000	4,000
Other than Personal Services	-	-	1,000	1,000	1,000
GRAND TOTAL	-	-	5,000	5,000	5,000
Funds Available in Park Base	-	-	5,000	5,000	5,000
Funds Requested from Regional Office	-	-	-	-	-

ON FORM	DATE SUBMITTED
10-237 ☐	12-84
10-238 ☐	
10-250 ☐	
10-451 ☐	

NATURAL RESOURCES PROJECT STATEMENT

1. PARK AND REGION: Lake Mead National Recreation Area - 8360, Western Region.

2. PROJECT NAME AND NUMBER: Burro Removal from Cottonwood Cove and Echo Bay. RM-11.

3. STATEMENT OF PROBLEM: At the time the 1969 Wild Horse and Burro Act was passed a small group of burros, thought to number less than 30, was inhabiting the area north of Cottonwood Cove in the Eldorado Canyon area. In recent years the burros have been increasing in population and expanding their range southward. The population now is estimated at 139 animals and they have expanded south 15 miles to the vicinity of Cottonwood Cove developed area.

At the same time the burros in the vicinity of Echo Bay have increased from approximately 12 animals to approximately 85 animals. They have become a safety hazard to visitors on the Northshore Road (approximately four accidents per year involve burros) and on the Echo Bay airstrip. They are also competing with bighorn sheep for water at Corral Spring during the summer months.

The Bureau of Land Management (BLM) manages the land adjacent to the park in both of these areas. In cooperation with the National Park Service, BLM has identified these two areas as burro management areas in the Herd Management Plan for Clark County. A cooperative removal of animals from these areas would take place when funds are available. It is estimated that approximately 160 animals would have to be removed.

4. WHAT HAS BEEN DONE: Nothing has been done since neither agency has had funds available for these areas.

5. DESCRIPTION OF WORK TO BE UNDERTAKEN: Under contract, approximately 65 animals would be removed from the Echo Bay area and approximately 95 animals would be removed from the Cottonwood Area. The animals would be live trapped using portable corrals or a helicopter and cowboys. The animals would be trailered to Topock, Arizona, where the BLM has corrals for a holding area for adopting burros out. All burros would be removed from south of the Eldorado Canyon road in the Cottonwood area and all burros north of Blue Point Spring or south of mile 31 on Northshore Road would be removed from the Echo Bay area.

6. LENGTH OF TIME NEEDED: One year.

7. WHAT WILL HAPPEN IF PROJECT IS NOT UNDERTAKEN: Burros will continue to expand populations and distributions in these areas. They will present hazards more often to motorists and will compete more heavily with bighorn sheep. Populations will eventually expand to the point that vegetation, soils, small mammals, and other natural resources will be impacted by too many burros.

8. WHAT ARE THE ALTERNATIVES:

a. No action. Under this alternative burro populations and distribution would continue to expand resulting in more impacts as described in No. 7 above.

b. Remove burros as per the BLM Herd Management Plan for Clark County. Reduction of numbers and distribution under this alternative will still allow the public to enjoy seeing burros, but will prevent impacts to bighorn sheep, vegetation, soils, etc., and will reduce the hazards to people driving on the Northshore Road.

9. PERSONNEL: BLM Wild Horse and Burro Specialist, contract personnel to rope and trailer burros, and National Park Service Resource Management Specialist.

10. ADMINISTRATION AND LOGISTICS: BLM will set up contract with cowboys and, if necessary, helicopter. BLM will be responsible for overall coordination of the project.

FUNDING:

	YEAR IN PROGRAM SEQUENCE				
	1st	2nd	3rd	4th	5th
Personal Services	-	16,000	-	-	-
Other than Personal Services	-	4,000	-	-	-
GRAND TOTAL	-	20,000	-	-	-
Funds Available in Park Base	-	-	-	-	-
Funds Requested from Regional Office	-	20,000	-	-	-

ON FORM	DATE SUBMITTED
10-237 [X]	12-84
10-238 [ ]	
10-250 [ ]	
10-451 [ ]	

11. REFERENCES AND CONTACTS: Bureau of Land Management, Las Vegas Resource District.

NATURAL RESOURCES PROJECT STATEMENT

1. PARK AND REGION: Lake Mead National Recreation Area - 8360, Western Region.

2. PROJECT NAME AND NUMBER: Construction of Fence and Cattleguard (Echo Bay Airstrip), RM-12.

3. STATEMENT OF PROBLEM: There is an estimated population of 85 burros in the area surrounding the Echo Bay airstrip. Cattle are also grazed within the area. The Echo Bay airstrip is frequented by burros crossing through the area or grazing the grasses along the edge of the runway. With the population of burros growing from approximately 12 animals in the mid 1970's to the present estimation, the safety problem of burros, and occasionally cattle, conflicting with aircraft is more frequent. Pilots have to be alert for burros in the vicinity and must sometimes buzz the runway to scare burros off. Because of this increasing conflict, a fence and cattleguard is recommended to prevent burros and cattle from getting on the runway and thus eliminating this hazard.

4. WHAT HAS BEEN DONE: Nothing.

5. DESCRIPTION OF WORK TO BE UNDERTAKEN: Construct and install a cattleguard on the road where it enters the main tie down area. Construct approximately two miles of five-strand barbed wire fence around the airstrip.

6. LENGTH OF TIME NEEDED: Less than three months.

7. WHAT WILL HAPPEN IF PROJECT IS NOT UNDERTAKEN: The hazard to aircraft, human life, and animal life will remain and probably grow worse. Leaving the airstrip unprotected from burros crossing the runway may result in a crash with loss of life.

8. WHAT ARE THE ALTERNATIVES:

a. No action. This alternative would allow burros to continue to cross the runway and may have serious consequences as described in No. 7 above.

b. Construction of fence and cattleguard around airstrip. This alternative will prevent burros and cattle from entering the airstrip and creating hazards for aircraft. No significant environmental impacts will result from this alternative.

9. PERSONNEL: Contract personnel to construct and install cattleguard and construct fence.

10. ADMINISTRATION AND LOGISTICS: Contracting may be done through a number of local sources. Bureau of Land Management is familiar with fencing contractors.

FUNDING

	YEAR IN PROGRAM SEQUENCE				
	1st	2nd	3rd	4th	5th
Personal Services	40,000	-	-	-	-
Other than Personal Services	19,671	-	-	-	-
GRAND TOTAL	59,671	-	-	-	-
Funds Available in Park Base	-	-	-	-	-
Funds Requested from Regional Office	59,671	-	-	-	-

ON FORM	DATE SUBMITTED
10-237 ☐	
10-238 ☒	December 1984
10-250 ☐	
10-451 ☐	

11. REFERENCES AND CONTACTS: Bureau of Land Management, Las Vegas Resource District.

NATURAL RESOURCES PROJECT STATEMENT

1. PARK AND REGION: Lake Mead National Recreation Area - 8360, Western Region.

2. PROJECT NAME AND NUMBER: Construction of Cattleguard and Fence (Boundary - Newberry Mountains). RM-13.

3. STATEMENT OF PROBLEM: In 1986, the Newberry Mountains will be taken out of grazing. Although under a grazing allotment for many years, cattle have not been put into the area for approximately 12 years. Bighorn sheep populations and camping use by the public has increased during this same period. There is an adjacent grazing allotment on Bureau of Land Management (BLM) lands and cattle are frequently trespassing into the Newberry allotment. When the area is taken out of grazing in 1986, a fence and cattleguard will be needed to prevent cattle on the adjacent allotment from trespassing.

4. WHAT HAS BEEN DONE: A very old fence is in complete disrepair, and the wire gate across the road is never closed because of so much traffic on the Christmas Tree Pass Road.

5. DESCRIPTION OF WORK TO BE UNDERTAKEN: A cattleguard will be constructed and installed on the Christmas Tree Pass Road at the park boundary. A five-strand barbed wire fence will be constructed for approximately one mile along the boundary on either side of the cattleguard. The fence will be tied in, both north and south, to rocky precipitous terrain so cattle cannot get around the ends.

6. LENGTH OF TIME NEEDED: Time for construction of cattleguard, installation, and construction of fence should be less than three months.

7. WHAT WILL HAPPEN IF PROJECT IS NOT UNDERTAKEN:

Cattle will continue to trespass into the camping area disrupting the public's enjoyment and into Willow Spring, Sacatone Spring, and Pipe Spring which are being used by bighorn sheep. The bighorn sheep herd is disrupted during the time trespass cattle are in these areas, especially at Pipe Spring. Vegetation in the area will also be impacted by the trespass cattle.

8. WHAT ARE THE ALTERNATIVES:

a. No action. This alternative would allow the problem to continue and impacts to the public, bighorn sheep and vegetation would continue.

b. Construct cattleguard and fence. This alternative would prevent cattle from trespassing into the subject area, but would not limit movement of the sheep since they will be able to negotiate the rocky terrain at the ends of the fence. The public would not be inconvenienced by a wire gate that they would have to open and close when driving the Christmas Tree Pass Road and they would be free from cattle and cattle droppings while camping at the designated camping area in the Newberry Mountains.

c. Hire personnel to keep cattle out. This alternative would require a daily check by a horseback rider to assure that cattle have not driftd into the subject area. More than one person would be required so the area is not neglected during days off, sick leave, annual leave, etc. This alternative would be very costly, and would still allow some trespass during the hours that the rider is not present and during times he does not find cattle that have trespassed.

9. PERSONNEL: Contract personnel to construct and install cattleguard and construct fence.

10. ADMINISTRATION AND LOGISTICS: Contracting may be done through a number of local sources. Bureau of Land Management is familiar with fencing contractors.

FUNDING

	YEAR IN PROGRAM SEQUENCE				
	1st	2nd	3rd	4th	5th
Personal Services	9,000	-	-	-	-
Other than Personal Services	4,000	-	-	-	-
GRAND TOTAL	13,000	-	-	-	-
Funds Available in Park Base	-	-	-	-	-
Funds Requested from Regional Office	13,000	-	-	-	-

ON FORM	DATE SUBMITTED
10-237 [ ]	
10-238 [X]	December 1984
10-250 [ ]	
10-451 [ ]	

11. REFERENCES AND CONTACTS: Bureau of Land Management, Las Vegas Resource District.

12. DATE OF SUBMISSION: December, 1984.

NATURAL RESOURCES PROJECT STATEMENT

1. PARK AND REGION: Lake Mead National Recreation Area - 8360, Western Region.

2. PROJECT NAME AND NUMBER: Analysis of Off-road Vehicle Impacts on the Environment and Recreation at Lake Mead National Recreation Area. N-20.

3. STATEMENT OF PROBLEM: Although there is an approved roads system for recreationists at Lake Mead, destruction of park lands from illegal off-road use of vehicles has been increasing at an alarming rate. Last year alone over six linear miles of new roads and vehicle tract were created in an eight square mile area. During the past three years, over 50 miles of roads and tracks have been established parkwide by illegal off-road use. Resources impacted by this problem include: significant plant species, soils, terrestrial mammals, reptiles, and invertebrates, air quality, scenic values and whole ecosystems. Problem areas include: the north side of Las Vegas Wash, Six and Nine Mile Coves, lands west of Katherine Landing (including the Newberry Mountains), Cottonwood Cove East, lands south of Eldorado Canyon and lands between Echo Bay and Stewart Point (map enclosed). A high percentage of this damage occurs within one mile of the shoreline and is highly visible from the lakes.

4. WHAT HAS BEEN DONE: An approved roads map has been developed and printed for public distribution. Law Enforcement efforts are made on a sporadic basis because of reduced manpower. Signing has been attempted to designate both legal and illegal roads, but vandals destroy signs in a short time and it is very costly to continue replacing them.

5. DESCRIPTION OF WORK TO BE UNDERTAKEN: An analysis should be done to identify the actual resource impacts done to soils, vegetation, wildlife, water and air quality, etc. This analysis should include the extent of resource damage already done, the expected damages to resources if illegal use is not curtailed and the impacts to recreational use (dust storms, water degradation, vehicles getting stuck, visual impairments, etc.). This study should also recommend management alternatives that will reduce or stop illegal off-road use and rehabilitation projects that will aid recovery of damaged resources.

6. LENGTH OF TIME NEEDED: Two years.

7. WHAT WILL HAPPEN IF NOT UNDERTAKEN: Increased loss of resources (vegetation, wildlife, soils, etc.) will occur eventually turning high impact areas into undesirable recreation sites. Recreationists utilizing beach areas in these vicinities will have less enjoyable experiences as scenic attractiveness decreases and blowing dust increases.

8. WHAT ARE THE ALTERNATIVES:

a. Allow off-road use.

9. PERSONNEL: One ecologist and one recreation specialist on contract.

10. ADMINISTRATION AND LOGISTICS: This project will require the services of an ecologist and a recreation specialist for two years. The Bureau of Land Management, Nevada Department of Wildlife and Arizona Game and Fish Department will be consulted.

FUNDING

	YEAR IN PROGRAM SEQUENCE				
	1st	2nd	3rd	4th	5th
Personal Services	16,000	16,000	-	-	-
Other than Personal Services	4,000	4,000	-	-	-
GRAND TOTAL	20,000	20,000	-	-	-
Funds Available in Park Base	-	-	-	-	-
Funds Requested from Regional Office	20,000	20,000	-	-	-

11. DATE OF SUBMISSION: April 1981.

NATURAL RESOURCES PROJECT STATEMENT

1. PARK AND REGION: Lake Mead National Recreation Area - 8360, Western Region.

2. PROJECT AND AND NUMBER: Analysis of Tamarisk Beach Encroachment and Recreation Impact. (Same project was formerly titled: Study Shoreline Tamarisk Ecology on Lake Mohave.) N-18.

3. STATEMENT OF PROBLEM: The spread and distribution of Tamarisk around the shorelines of Lakes Mead and Mohave is basically unknown. Present encroachment of Tamarisk on beaches and projected encroachment needs to be determined in order to predict changes in beach use by visitors and/or wildlife.

4. WHAT HAS BEEN DONE: Nothing has been done to determine present encroachment of shoreline tamarisk.

5. DESCRIPTION OF WORK TO BE UNDERTAKEN: Work should be done to determine present distribution of shoreline tamarisk, historical encroachment rate from the time the lake was filled to present, projected encroachment rate for the next 15-20 years, and effects that future encroachment will have on beach camping availability and wildlife use patterns. This study should also recommend alternatives for the mangement of tamarisk that will enhance visitor recreation and enjoyment and enhance wildlife utilization of shorelines.

6. LENGTH OF TIME NEEDED: Two Years.

7. WHAT WILL HAPPEN IF NOT UNDERTAKEN: Valuable information will be lacking when developing management plans for beach use carrying capacities, information for wildlife management along shorelines will be lacking, and needed information for the management of shoreline tamarisk will not be available.

8. WHAT ARE THE ALTERNATIVES:

   a. Do not conduct the study.

   b. Consult other areas that have tamarisk problems.

9. PERSONNEL: One plant ecologist on contract.

10. ADMINISRATION AND LOGISTICS: This project will require the services of a plant ecologist for two years. The resource office of the Bureau of Reclamation will be contacted for input in developing the study.

FUNDING

	YEAR IN PROGRAM SEQUENCE				
	1st	2nd	3rd	4th	5th
Personal Services	18,000	18,000	-	-	-
Other than Personal Services	3,000	3,000	-	-	-
GRAND TOTAL	21,000	21,000	-	-	-
Funds Available in Park Base	-	-	-	-	-
Funds Requested from Regional Office	21,000	21,000	-	-	-

11. DATE OF SUBMISSION: January 1979.

NATURAL RESOURCES PROJECT STATEMENT

1. PARK AND REGION: Lake Mead National Recreation Area - 8360, Western Region.

2. PROJECT NAME AND NUMBER: Monitor and Assess Air Quality at developed areas. RM-10.

3. STATEMENT OF PROBLEM: Lake Mead is designated a Class II area. The present air quality and changes that are taking place are unknown. Air quality at developed areas must be monitored to stay within Environmental Protection Agency (EPA) guidelines and for future planning projects.

4. WHAT HAS BEEN DONE: There has been no monitoring of air quality at developed sites except by Desert Research Institute who is monitoring the effects of the Mohave Generating Station in Southern Nevada.

5. DESCRIPTION OF WORK TO BE UNDERTAKEN: In cooperation with EPA and state agencies, air quality monitoring equipment should be utilized at three developed areas within Lake Mead National Recreation Area. These should be located at Katherine Landing, Las Vegas Wash and Echo Bay.

A fourth station could be monitored in cooperation with Grand Canyon National Park at or near Pearce Ferry. Pollutants to be monitored will be agreed upon during cooperative efforts with the state and EPA. Assistance from the Western Regional Office is requested in setting up this plan.

6. LENGTH OF TIME NEEDED: Continuing.

7. WHAT WILL HAPPEN IF NOT UNDERTAKEN: Air quality standards may be exceeded with a resultant decrease in visitor enjoyment of recreation opportunities and a possible increase in respiratory health hazards.

8. WHAT ARE THE ALTERNATIVES:

a. Do not monitor air quality.

b. Monitor air quality from other stations outside the recreation area.

9. PERSONNEL: Three National Park Service Rangers, two EPA or state technicians.

10. ADMINISTRATION AND LOGISTICS: Installation and instruction on monitoring equipment will be done by two technicians from EPA or state or combination of the two agencies. Six field Rangers (two at each station) will be instructed in reading and checking the equipment and will carry out these functions.

FUNDING

	YEAR IN PROGRAM SEQUENCE				
	1st	2nd	3rd	4th	5th
Personal Services	2,000	2,000	2,000	2,000	2,000
Other than Personal Services	9,000	9,000	9,000	9,000	9,000
GRAND TOTAL . .	11,000	11,000	11,000	11,000	11,000
Funds Available in Park Base	-	-	-	-	-
Funds Requested from Regional Office	11,000	11,000	11,000	11,000	11,000

11. DATE OF SUBMISSION: January 1979

NATURAL RESOURCES PROJECT STATEMENT

1. PARK AND REGION: Lake Mead National Recreation Area - 8360, Western Region.

2. PROJECT NAME AND NUMBER: Monitor and Assess Water Quality. W-2.

3. STATEMENT OF PROBLEM: Lake Mead has four perennial water sources, only one of which has been studied or monitored for water quality. The present water quality, other than around Las Vegas Wash, is unknown. Water quality in critical areas of Lakes Mead and Mohave must be monitored for compliance with EPA standards for the safety and enjoyment of visitors.

4. WHAT HAS BEEN DONE: There has been very little monitoring of water quality in high visitor use areas in the two lakes. A concentrated effort has been made to monitor water quality in Las Vegas Wash and Bay and water samples are taken bi-monthly at designated swim areas.

5. DESCRIPTION OF WORK TO BE UNDERTAKEN: In cooperation with the Environmental Protection Agency (EPA), Division of Colorado River Resources and other agencies, an inventory of all waters within Lake Mead National Recreation Area should be made. These waters will then be classified as to their use and monitored to assure acceptable water quality. It is requested that the Western Regional Office assist Lake Mead in setting up this plan. Water quality monitoring equipment should be utilized in no less than three strategic locations within the recreation area.

6. LENGTH OF TIME NEEDED: Continuing.

7. WHAT WILL HAPPEN IF NOT UNDERTAKEN: Water quality standards may be exceeded with resultant decrease in visitor enjoyment and possible increase in water borne health hazards to both humans and wildlife.

8. WHAT ARE THE ALTERNATIVES:

a. Do nothing.

b. Monitor water quality from outside sources (if available).

9. PERSONNEL: One Hydrologist, one Water Sanitation Engineer, one Water Quality Technician.

10. ADMINISTRATION AND LOGISTICS: Classification of water use and initial inventory will be accomplished by a Hydrologist. Installation and instruction on monitoring equipment will be done by a Water Quality Technician. A National Park Service Water Sanitation Engineer will be instructed in reading and checking equipment and will carry out these functions.

FUNDING

	YEAR IN PROGRAM SEQUENCE				
	1st	2nd	3rd	4th	5th
Personal Services	5,000	2,500	2,500	2,500	2,500
Other than Personal Services	45,000	15,000	15,000	15,000	15,000
GRAND TOTAL . .	50,000	17,500	17,500	17,500	17,500
Funds Available in Park Base	2,500	2,500	2,500	2,500	2,500
Funds Requested from Regional Office	47,500	15,000	15,000	15,000	15,000

11. DATE OF SUBMISSION: January 1979

NATURAL RESOURCES PROJECT STATEMENT

1. PARK AND REGION: Lake Mead National Recreation Area - 8360, Western Region.

2. PROJECT NAME AND NUMBER: Literature Review of Soils - Phase I. N-11.

3. STATEMENT OF PROBLEM: Lake Mead National Recreation Area has a variety of soil types with varying characteristics. Plant communities are sometimes determined by soil types on which they grow. In several areas of the park road maintenance problems exist because of lack of knowledge of soil characteristics when constructed. Some of the soils built on are very unstable causing buckling of the road surface which in turn is a hazard to the public and requires costly repairs. A comprehensive literature review is needed to identify and consolidate present knowledge and documentation of soil types and characteristics that are available.

4. WHAT HAS BEEN DONE: Nothing.

5. DESCRIPTION OF WORK TO BE UNDERTAKEN: A comprehensive literature review will be made to identify and consolidate present knowledge and documentation of soil types and characteristics that are available. Mapping of the available knowledge will be done on a 1:48,000 scale so they will mate with geological maps from other proposed studies.

This review will also identify areas within Lake Mead National Recreation Area that have no information available and make recommendations for soils studies to complete soils information within the recreation area. This project will also identify load bearing strength, slope stability, permeability and infiltration capacity and other characteristics of known soil types to assist management in decision on construction sites, flood control, etc.

6. LENGTH OF TIME NEEDED: One year.

7. WHAT WILL HAPPEN IF PROJECT IS NOT UNDERTAKEN: No knowledge will be available on soils types and characteristics. More construction may take place on unstable soils and flood mitigation measures may not be as effective.

8. WHAT ARE THE ALTERNATIVES:

a. No action. This will result in No. 7 above.

b. Literature review of soils. This project will identify and consolidate present knowledge of soils within the recreation area. No environmental impacts will occur from this project.

c. Start a park wide soils survey that may duplicate previous studies thus wasting money on repetitive work.

9. PERSONNEL: Contract Soils Specialist.

10. ADMINISTRATION AND LOGISTICS: Contract to be executed by the Cooperative National Park Resource Studies Unit with a soils specialist.

FUNDING

	YEAR IN PROGRAM SEQUENCE				
	1st	2nd	3rd	4th	5th
Personal Services	9,500	-	-	-	-
Other than Personal Services	500	-	-	-	-
GRAND TOTAL	10,000	-	-	-	-
Funds Available in Park Base	-	-	-	-	-
Funds Requested from Regional Office	10,000	-	-	-	-

ON FORM DATE SUBMITTED

10-237 [X]

10-238 [ ]

10-250 [ ]

10-451 [ ]

11. REFERENCES AND CONTACTS: Soil Conservation Service, Fred Bachhuber, Geology Department, University of Nevada, Las Vegas, Bureau of Land Management.

NATURAL RESOURCES PROJECT STATEMENT

1. PARK AND REGION: Lake Mead National Recreation Area - 8360, Western Region.

2. PROJECT NAME AND NUMBER: Water Catchment and Guzzler Construction. RM-2.

3. STATEMENT OF PROBLEM: Populations of Desert Bighorn Sheep and other animal species are limited in their distribution and abundance by the lack of fresh water sources that were present before alteration by man's activities.

4. WHAT HAS BEEN DONE: Two water catchment devices have already been constructed in the recreation Area and are functioning efficiently. A special provision has been written into the wilderness proposal to allow for the construction of such devices.

5. DESCRIPTION OF WORK TO BE UNDERTAKEN: Water catchment devices and guzzlers will be placed at strategic locations that are developed from data gathered in the Basic Ground Water Survey (W-1). Specific locations have not been developed at this time but will coincide with sites that had water prior to man's activities.

6. LENGTH OF TIME NEEDED: This program will be scheduled to coincide with the Basic Ground Water Survey (W-1) and thus will require one year beyond the completion of that project, or seven years from start.

7. WHAT WILL HAPPEN IF PROJECT IS NOT UNDERTAKEN: Valuable game resources will not be as readily available to the recreational public. Non-game species (which also benefit from additional water source) will not receive these benefits. Range distribution of the desert bighorn will likely remain static, as some of the alternatives below are only partial solutions to desired results.

8. WHAT ARE THE ALTERNATIVES:

a. Do not construct guzzlers and water catchment devices.

b. Encourage the states to continue to develop guzzlers and water catchment devices outside our boundary.

c. Pipe water to desired locations, if feasible.

d. Drill wells at desired locations, if feasible.

e. Truck water to accessible locations.

9. PERSONNEL: Existing park staff.

10. ADMINISTRATION AND LOGISTICS: First year of project will be accelerated to catch up with data already formulated through Basic Ground Water Survey. Project will be supervised by existing park staff and work will be completed by encouraging the participation of local youth conservation groups, Boy Scouts, and interested civic and conservation organizations.

FUNDING

	YEAR IN PROGRAM SEQUENCE				
	1st	2nd	3rd	4th	5th
Personal Services	12,000	6,000	6,000	6,000	6,000
Other than Personal Services	12,000	6,000	6,000	6,000	6,000
GRAND TOTAL	24,000	12,000	12,000	12,000	12,000
Funds Available in Park Base	-	-	-	-	-
Funds Requested from Regional Office	24,000	12,000	12,000	12,000	12,000

ON FORM DATE SUBMITTED

10-237 ☐

10-238 ☐

10-250 ☐

10-451 ☐

11. REFERENCES AND CONTACTS:

a. Arizona Game and Fish Department

b. Nevada Department of Wildlife

c. Bentley, C. B., 1969. Geohydrologic Reconnaissance of Lake Mead National Recreation Area - Mount Davis to Davis Dam, Arizona: U. S. Geol. Survey admin. rept., 34 pp.

d. Bentley, C. B., 1970. Geohydrologic Reconnaissance of Lake Mead National Recreation Area - Opal Mountain to Davis Dam, Nevada: U. S. Geol. Survey admin. rept., 36 pp.

e. Bentley, C. B., 1971. Geohydrologic Reconnaissance of Lake Mead National Recreation Area - Hoover Dam to Mount Davis, Arizona: U. S. Geol. Survey admin. rept., 37 pp.

f. Breyen, Leo James, 1971. Desert Bighorn Habitat Evaluation in the Eldorado Mountains of Southern Nevada. Unpub. Master's thesis for University of Nevada, Las Vegas.

g. Desert Bighorn Council, 1971. The Desert Bighorn, Its Life History, Ecology and Management. Edited for the Desert Bighorn Council by Lowell Sumner and Gale Monson. Preliminary Edition, 1971.

h. Laney, R. L., 1973. Geohydrologic Reconnaissance of Lake Mead National Recreation Area - Hoover Dam to Temple Bar, Arizona: U. S. Geol. Survey admin. rept., 42 pp.

i. Longwell, C. R., 1963. Reconnaissance Geology between Lake Mead and Davis Dam, Arizona-Nevada: U. S. Geol. Survey Prof. Paper 374-E, 51 pp.

j. U. S. Geological Survey, 1971. Water resources data for Arizona, 1969 - Part 2. Water quality records: U. S. Geol. Survey open-file report, 114 pp.

12. DATE OF SUBMISSION: August 12, 1974.

NATURAL RESOURCES PROJECT STATEMENT

1. PARK AND REGION: Lake Mead National Recreation Area - 8360, Western Region.

2. PROJECT NAME AND NUMBER: Control Puncture Vine. RM-3.

3. STATEMENT OF PROBLEM: This exotic weed has caused problems and discomfort to the park visitor in some of the developed sites by puncturing shoe soles, bike tires and bare feet.

4. WHAT HAS BEEN DONE: Nothing.

5. DESCRIPTION OF WORK TO BE UNDERTAKEN: A complete survey of the extent of puncture vine in the recreation area will be undertaken. With the assistance of a trained entomologist, and with the sanction of the U. S. Department of Agriculture, two species of beetles, Microlarinus lareynii and M. lypriformis, which have been successfully introduced into Arizona, California and Hawaii, will be introduced into the recreation area. After the introduction, progress will be monitored by the park staff.

6. LENGTH OF TIME NEEDED: Two years from start.

7. WHAT WILL HAPPEN IF NOT UNDERTAKEN: Puncture vine will continue to create an inconvenience and discomfort to park visitors.

8. WHAT ARE THE ALTERNATIVES:

a. No action, and hope the beetles naturally migrate into the area from previous introductions elsewhere.

b. Attempt hand control and other manual methods in select public use areas.

c. Chemical control.

d. Mechanical control, such as pulling road shoulders.

e. Combination chemical and mechanical control

9. PERSONNEL: A trained entomologist, with the assistance of the park staff.

10. ADMINISTRATION AND LOGISTICS: Program will be under the supervision of the park staff and will be worked in cooperation with the States of Arizona and Nevada and the cooperation of the U. S. Department of Agriculture.

FUNDING

	YEAR IN PROGRAM SEQUENCE				
	1st	2nd	3rd	4th	5th
Personal Services	12,000	2,000	-	-	-
Other than Personal Services	1,500	500	-	-	-
GRAND TOTAL	13,500	2,500			
Funds Available in Park Base	2,500	2,500	-	-	-
Funds Requested from Regional Office	11,000	-	-	-	-

ON FORM DATE SUBMITTED

10-237 ☐

10-238 ☐

10-250 ☐

10-451 ☐

11. REFERENCES AND CONTACTS:

a. Andres, L. A. and Angalet, G. W., 1963. Notes on the ecology and host specificity of Microlarinus lareynii and M. lypriformis (Coleoptera: Curculionidae) and the biological control of puncture vine, Tribulus terrestris. J. Econ. Entomol. 56: 333-340.

b. Huffaker, C. B., 1971. Biological Control - Proceedings of an AAAS Symposium on Biological Control, held at Boston, Massachusetts, December 30-31, 1969. Flenum Press, New York.

c. Huffaker, C. B., Ricker, D. W., and Kennett, C. E., 1961. Biological control of puncture vine with imported weevils. Calif. Agr. 15: 11-12.

d. Johnson, E., 1932. the puncture vine in California. Calif. Agr. Exp. Sta. Bull. 528: 1-42.

e. May, Judson and Roney, J. N., 1969. Arizona Cooperative Insect Survey. Rept. No. 33, August 1969.

12. DATE OF SUBMISSION: August 12, 1974

NATURAL RESOURCES PROJECT STATEMENT

1. PARK AND REGION: Lake Mead National Recreation Area - 8360, Western Region.

2. PROJECT NAME AND NUMBER: Biological Control of Mosquito Populations. RM-7.

3. STATEMENT OF PROBLEM: In some of the developed areas, fluctuating lake levels are leaving remnant pools which become disconnected from the lakes. These ponds are breeding sites for two species of mosquito, the fierce biter, Aedes vexans, and Culex tarsalis, the vector of St. Louis and Western encephalitis.

4. WHAT HAS BEEN DONE: The mosquito fish (Gambusia sp.) has been introducted into two ponds and the sewage lagoons at Cottonwood Cove.

5. DESCRIPTION OF WORK TO BE UNDERTAKEN: As other breeding sites are located, Gambusia will be introduced.

6. LENGTH OF TIME NEEDED: Continuing.

7. WHAT WILL HAPPEN IF NOT UNDERTAKEN: Mosquitoes will be a nuisance to the area visitor and resident. Public health problems could develop.

8. WHAT ARE THE ALTERNATIVES:

a. Do nothing.

b. Chemical control.

9. PERSONNEL: Park staff, with assistance of U. S. Public Health Service.

10. ADMINISTRATION AND LOGISTICS: Area Rangers will assist Public Health Service personnel in this program.

FUNDING

	YEAR IN PROGRAM SEQUENCE				
	1st	2nd	3rd	4th	5th
Personal Services	500	500	500	500	500
Other than Personal Services	100	100	100	100	100
GRAND TOTAL	600	600	600	600	600

Funds Available in Park Base	600	600	600	600	600
Funds Requested from Regional Office	-	-	-	-	-

ON FORM DATE SUBMITTED

10-237 ☐

10-238 ☐

10-250 ☐

10-451 ☐

11. REFERENCES AND CONTACTS: U. S. Public Health Service.

12. DATE OF SUBMISSION: August 12, 1974.

NATURAL RESOURCES PROJECT STATEMENT

1. PARK AND REGION: Lake Mead National Recreation Area - 8360, Western Region.

2. PROJECT NAME AND NUMBER: Analysis of Bighorn Populations and Distribution in Lake Mead National Recreation Area (Same project was formerly titled: Bighorn Ecology Study). N-3.

3. STATEMENT OF PROBLEM: Lake Mead National Recreation Area has outstanding habitat and, apparently, a stable population of desert bighorn. However, little information is available for the competent management necessary to increase this herd to a maximum population level.

4. WHAT HAS BEEN DONE: Extensive research has been conducted in areas outside the recreation area. Work inside the recreation area has been confined mainly to the River Mountains herd.

5. DESCRIPTION OF WORK TO BE UNDERTAKEN: Conduct a comprehensive ecological survey designed, among other things, to identify the following: the locations of bands of bighorn, population densities and trends, reproductive rates, migratory patterns, water sources used, food habits, and range competition with burros and domestic cattle. Management actions necessary to achieve maximum populations for visitor use and enjoyment will be recommended.

6. LENGTH OF TIME NEEDED: Five years to complete study.

7. WHAT WILL HAPPEN IF NOT UNDERTAKEN: Possible new information will not be added to the general knowledge of desert bighorn ecology. Management of desert bighorn in Lake Mead National Recreation Area will have to be based on incomplete factual knowledge. Public use and enjoyment, including hunting, will not achieve the highest potential.

8. WHAT ARE THE ALTERNATIVES:

a. Do not conduct the study and rely on information developed outside the area.

b. Consult specialist in surrounding area who are acquainted with bighorn management in their area.

9. PERSONNEL: One wildlife biologist on contract.

10. ADMINISTRATION AND LOGISTICS: This work will require the services of a wildlife management research biologist for approximately one-half man-year for five years. The state agencies will be contacted for input in developing the study.

FUNDING

	YEAR IN PROGRAM SEQUENCE				
	1st	2nd	3rd	4th	5th
Personal Services	4,000	11,000	11,000	8,000	-
Other than Personal Services	1,000	4,000	4,000	2,000	-
GRAND TOTAL . .	5,000	15,000	15,000	10,000	-
Funds Available in Park Base	-	-	-	-	-
Funds Requested from Regional Office	5,000	15,000	15,000	10,000	-

ON FORM	DATE SUBMITTED
10-237 [X]	September 10, 1973
10-238 [X]	April 16, 1974
10-250 [ ]	
10-451 [ ]	

11. REFERENCES AND CONTACTS:

a. Breyen, Leo James, 1971. Desert Bighorn Habitat Evaluation in Eldorado Mountains of Southern Nevada. Unpub. Master's Thesis for University of Nevada, Las Vegas.

b. Dennison, Alan, 1964. Administrative Reports on Desert Bighorn Ecology and Distribution in the River Mountains. Files, Lake Mead National Recreation Area.

c. Desert Bighorn Council, 1971. The Desert Bighorn, Its Life History Ecology and Management. Edited for the Desert Bighorn Council by Lowell Sumner and Gale Monson. Preliminary Edition, 1971.

d. Desert Bighorn Council 1957 to 1972. Transactions from all Annual Meetings held through 1972.

e. Hansen, Charles G., 1968. Hunting Bighorn Sheep in Nevada. Fraternity of the Desert Bighorn, Las Vegas, Nevada, 20 pp.

12. DATE OF SUBMISSION: September 10, 1973.

NATURAL RESOURCES PROJECT STATEMENT

1. PARK AND REGION: Lake Mead National Recreation Area - 8360, Western Region.

2. PROJECT NAME AND NUMBER: Basic Ecosystems Analysis. N-4.

3. STATEMENT OF PROBLEM: Basic information for effective management of the biological resources of the recreation area is lacking. Area managers need background information to make prudent decisions regarding the management and protection of the area's biological resources.

4. WHAT HAS BEEN DONE: Very little has been accomplished on a systematic basis. Bradley and Deacon (1967) have identified the basic biotic communities of Southern Nevada in the Basin and Range Province. The biotic communities of the recreation area have been defined but not accurately plotted or evaluated.

5. DESCRIPTION OF WORK TO BE UNDERTAKEN: A three-year (3) survey will be undertaken. This survey will result in the accurate mapping and plotting of the biotic communities of the area. The dynamics of the ecosystems will be evaluated, along with basic climatological patterns and the environmental effects of past and existing land and water uses. A summary will be prepared summarizing the status of knowledge about the principal ecosystems, and specific research needs will be identified.

6. LENGTH OF TIME NEEDED: Three years.

7. WHAT WILL HAPPEN IF NOT UNDERTAKEN: Administrative decisions involving the biological resources will have to be made without information relating to the environmental effects of such decisions. Future planning will not be able to consider long range effects on the resources and environment.

8. WHAT ARE THE ALTERNATIVES:

   a. Do not conduct the study.

   b. Try to apply data already developed for similar areas.

   c. Study only the aquatic ecosystems

   d. Study only the terrestrial ecosystems.

   e. Study only the dominant ecosystems.

9. PERSONNEL: Three biologists and one clerk-typist on contract.

10. ADMINISTRATION AND LOGISTICS: Work to be done under the direction of extension research biologist.

FUNDING

	YEAR IN PROGRAM SEQUENCE				
	1st	2nd	3rd	4th	5th
Personal Services	55,000	55,000	55,000	-	-
Other than Personal Services	5,000	5,000	5,000	-	-
GRAND TOTAL	60,000	60,000	60,000	-	-
Funds Available in Park Base	-	-	-	-	-
Funds Requested from Regional Office	60,000	60,000	60,000	-	-

ON FORM	DATE SUBMITTED
10-237 [X]	September 10, 1973
10-238 [X]	April 16, 1974
10-250 [ ]	
10-451 [ ]	

11. REFERENCES AND CONTACTS:

a. Bradley, W. Glen and Deacon, James E., 1967. The Biotic Communities of Southern Nevada. Nevada State Museum, Anthropological Papers, No. 13, Part 4, 93 pp.

b. Desert Research Institute, 1972-32. Annual Report. University of Nevada System, 92 pp.

c. Federal Water Pollution Control Administration. 1967. Report on Pollution in Las Vegas Wash and Las Vegas Bay.

d. Hoffman, D. A., Tramutt, P. R., and Heller, F. C., 1967. Water Quality Study of Lake Mead, U. S. Department of Interior, Bureau of Reclamation, Denver, Colorado.

e. Hoffman, D. A., Tramutt, P. R., and Heller, F. C., 1971. The Effects of Las Vegas Wash Effluent upon the Water Quality of Lake Mead. U. S. Department of Interior, Bureau of Reclamation, Denver, Colorado.

12. DATE OF SUBMISSION: September 10,1973.

NATURAL RESOURCES PROJECT STATEMENT

1. PARK AND REGION: Lake Mead National Recreation Area - 8360, Western Region.

2. PROJECT NAME AND NUMBER: Resources Basic Inventory - Invertebrates. N-7.

3. STATEMENT OF PROBLEM: The basic distribution, identification and relative abundance of the invertebrates are unknown. Information that directly affects the park visitor, such as the distribution and abundance of poisonous invertebrates like the deadly scorpion (Centruroides spp.) and the brown recluse spider (Lactrodectus reclusa) are completely unknown. Aquatic invertebrates. The ecology of the rare, freshwater jellyfish (Craspedacusta sowerbii) in Lake Mead has been studies. Nothing has been accomplished on the terrestrial invertebrates except for general studies which, incidentally, include Lake Mead National Recreation Area within their scope.

5. DESCRIPTION OF WORK TO BE UNDERTAKEN: It would be impossible and economically undesirable to compile complete information on the entire invertebrate fauna of the recreation area. The study will be designed to identify the outstanding and abundant aquatic and terrestrial invertebrates of the park. Any threatened, endangered or locally rare or uncommon species will be pointed out. Checklists and bibliographies will be prepared. Special attention will be placed on species that directly affect the welfare of the park visitor and those that have a high degree of interaction in the ecosystem and food chains.

6. LENGTH OF TIME NEEDED: Three years.

7. WHAT WILL HAPPEN IF NOT UNDERTAKEN: Possible new information will not be added to the general knowledge of the recreation area and possible future planning needs. The knowledge of important ecological interactions will not be known to park managers.

8. WHAT ARE THE ALTERNATIVES:

a. Do not conduct the study.

b. Study only the terrestrial invertebrates.

c. Study only the aquatic invertebrates.

d. Study only the arthropods.

e. Study only the mollusks.

9. PERSONNEL: Three student biologists under contract.

10. ADMINISTRATION AND LOGISTICS: Work to be done by three part-time student biologists under the direction of the extension research biologist.

FUNDING

	YEAR IN PROGRAM SEQUENCE				
	1st	2nd	3rd	4th	5th
Personal Services	20,000	20,000	20,000	-	-
Other than Personal Services	8,000	8,000	8,000	-	-
GRAND TOTAL	28,000	28,000	28,000	-	-
Funds Available in Park Base	-	-	-	-	-
Funds Requested from Regional Office	28,000	28,000	28,000	-	-

ON FORM DATE SUBMITTED

10-237 ☐

10-238 ☐

10-250 ☐

10-451 ☐

11. REFERENCES AND CONTACTS:

a. Deacon, James E., and Haskell, W. L., 1966. Observations on the Ecology of the Freshwater Jellyfish in Lake Mead, Nevada. Desert Research Institute Preprint Series No. 20, University of Nevada, 27 pp.

b. Dodge, Natt N., 1947. Poisonous Dwellers of the Desert. Southwestern Monuments Association, Santa Fe, Popular Series No. 3, 44pp.

c. Leser, James F., 1973. A survey of the Benthic Organisms at Blue Point Spring. Unpub. Graduate Report, University of Nevada, Las Vegas, 10 pp.

d. Pennak, Robert W., 1953. Fresh-Water Invertebrates of the United States. The Ronald Press Company, New York. 769 pp.

12. DATE OF SUBMISSION: September 10, 1973.

NATURAL RESOURCES PROJECT STATEMENT

1. PARK AND REGION: Lake Mead National Recreation Area - 8360, Western Region.

2. PROJECT NAME AND NUMBER: Resources Basic Inventory, Non-vascular Plants. N-8.

3. STATEMENT OF PROBLEM: The basic distribution, identification and relative abundance of the non-vascular plants of the park are unknown. Distribution and abundance of algae have a direct bearing on water quality, aesthetics and food chains.

4. WHAT HAS BEEN DONE: Nothing has been accomplished on the fungi, lichens and mosses. Some of the abundant aquatic algae have been identified in water quality and graduate research studies.

5. DESCRIPTION OF WORK TO BE UNDERTAKEN: It would be nearly impossible and economically undesirable to compile complete information on the entire non-vascular flora of the recreation area. The study will be designed to identify the outstanding and abundant aquatic and terrestrial non-vascular plants of the park. Any endangered, threatened, locally rare or uncommon species will be pointed out and appropriate protection afforded; checklists and bibliographies will be prepared. Special attention will be placed on species that have a high degree of interaction in the ecosystem and those that are valuable links in the food chain.

6. LENGTH OF TIME NEEDED: Three years.

7. WHAT WILL HAPPEN IF NOT UNDERTAKEN: Possible new information will not be added to the general knowledge of the recreation area and possibly future planning needs. The knowledge of important ecological interactions will not be known to park managers.

8. WHAT ARE THE ALTERNATIVES:

a. Do not conduct the study.

b. Study only the terrestrial species.

c. Study only the aquatic species.

d. Study only the algae.

e. Study only the fungi and lichens.

f. Study only the mosses and liverworts.

9. PERSONNEL: Two Part-Time student biologists under contract.

10. ADMINISTRATION AND LOGISTICS: Work to be done by two part-time student biologists under the direction of the extension research biologist.

FUNDING

	YEAR IN PROGRAM SEQUENCE				
	1st	2nd	3rd	4th	5th
Personal Services	12,000	12,000	12,000	-	-
Other than Personal Services	5,000	5,000	5,000	-	-
GRAND TOTAL	17,000	17,000	17,000	-	-
Funds Available in Park Base	-	-	-	-	-
Funds Requested from Regional Office	17,000	17,000	17,000	-	-

ON FORM DATE SUBMITTED

10-237 ☐

10-238 ☐

10-250 ☐

10-451 ☐

11. REFERENCES AND CONTACTS:

a. Deacon, James E., 1973. An Assessment of the Suitability of Blue Point Spring, Lake Mead National Recreation Area, as a Sanctuary for Endangered Fishes. Unpub. NPS report, 13 pp.

b. Federal Water Pollution Control Administration. 1967. Report on Pollution in Las Vegas Wash and Las Vegas Bay.

c. Hoffman, D. A., Tramutt, P. R., Heller, F. C., 1967. Water Quality Study of Lake Mead, U. S. Dept. Interior, Bureau of Reclamation, Denver, Colorado.

12. DATE OF SUBMISSION: August 12, 1974.

NATURAL RESOURCES PROJECT STATEMENT

1. PARK AND REGION: Lake Mead National Recreation Area - 8360, Western Region.

2. PROJECT NAME AND NUMBER: Study Effects of Cattle Grazing on Native Game Species and Plant Communities on the Shivwits Plateau. N-10.

3. STATEMENT OF PROBLEM: The Shivwits Plateau has been heavily grazed in recent years. The effects of this grazing on native vegetation and the consequent interactions on wildlife are unknown.

4. WHAT HAS BEEN DONE: Nothing.

5. DESCRIPTION OF WORK TO BE UNDERTAKEN: Conduct a range study and habitat analysis on the aforementioned area.

6. LENGTH OF TIME NEEDED: Two years.

7. WHAT WILL HAPPEN IF NOT UNDERTAKEN: Area managers will not be able to make prudent decisions regarding the management and intensity of grazing in this important habitat area. Prudent management decisions which will assure compliance with Congressional mandates will be impaired.

8. WHAT ARE THE ALTERNATIVES:

a. Do not conduct the study.

b. Attempt to continue making decisions without sufficient information.

c. Eliminate grazing.

d. Indiscriminately reduce number of grazing allotments.

9. PERSONNEL: One full-time range management specialist on contract.

10. ADMINISTRATION AND LOGISTICS: See No. 9, Personnel, above.

FUNDING

	YEAR IN PROGRAM SEQUENCE				
	1st	2nd	3rd	4th	5th
Personal Services	-	15,000	15,000	-	-

Other than Personal Services	-	2,000	2,000	-	-
GRAND TOTAL	-	17,000	17,000	-	-
Funds Available in Park Base	-	-	-	-	-
Funds Requested from Regional Office	-	17,000	17,000	-	-

ON FORM — DATE SUBMITTED

10-237 ☐

10-238 ☐

10-250 ☐

10-451 ☐

11. REFERENCES AND CONTACTS:

a. U. S. Bureau of Land Management, St. George, Utah

12. DATE OF SUBMISSION: August 12, 1974.

NATURAL RESOURCES PROJECT STATEMENT

1. PARK AND REGION: Lake Mead National Recreation Area - 8360, Western Region.

2. PROJECT NAME AND NUMBER: Warm Springs Inventory and Ecology. N-13.

3. STATEMENT OF PROBLEM: Many desert fishes that exist in unprotected environments outside the National Recreation Area are becoming extinct due to loss of habitat.

4. WHAT HAS BEEN DONE: Outside the recreation area, several organizations dedicated to the preservation of desert fishes have been established. Habitats of desert fishes have been identified and protected where possible. Several refugiums have been established. Inside the recreation area, the Nevada Department of Wildlife and Bureau of Reclamation have established a refugium for the Devils Hole pupfish. Blue Point Spring has been studied for the feasibility of introducing another officially recognized endangered desert fish, the Moapa dace.

5. DESCRIPTION OF WORK TO BE UNDERTAKEN: In conjunction with the Basic Ground Water Survey (W-1), warm springs that are located will be studied for their ecological and biological suitability for possible introduction of endangered desert fishes. This will include thorough analysis of physical and chemical water quality.

6. LENGTH OF TIME NEEDED: Six years from start. Initial phase will catch up with work already completed on project W-1.

7. WHAT WILL HAPPEN IF NOT UNDERTAKEN: Some desert fishes may become extinct in their natural range with no remnant population preserved.

8. WHAT ARE THE ALTERNATIVES:

   a. Do nothing.

   b. Study only known existing warm springs.

9. PERSONNEL: Part-time ecologist on contract.

10. ADMINISTRATION AND LOGISTICS: See No. 9, Personnel, above.

FUNDING

	YEAR IN PROGRAM SEQUENCE				
	1st	2nd	3rd	4th	5th
Personal Services	8,000	3,000	3,000	3,000	3,000
Other than Personal Services	2,000	1,000	1,000	1,000	1,000
GRAND TOTAL	10,000	4,000	4,000	4,000	4,000
Funds Available in Park Base	-	-	-	-	-
Funds Requested from Regional Office	10,000	4,000	4,000	4,000	4,000

ON FORM DATE SUBMITTED

10-237 ☐

10-238 ☐

10-250 ☐

10-451 ☐

11. REFERENCES AND CONTACTS:

a. Deacon, James E., 1973. An Assessment of the Suitability of Blue Point Spring, Lake Mead National Recreation Area, as a Sanctuary for Endangered Fishes. Unpub. NPS report, 13 pp.

b. Sharpe, F. Phillip, Guenther, Herbert R., Deacon, James E., 1973. Endangered Pupfish at Devil's Hole. Reclamation ERA 59(2):25-29.

12. DATE OF SUBMISSION: August 12, 1974.

NATURAL RESOURCES PROJECT STATUS SHEET

Lake Mead National Recreation Area, Arizona/Nevada

Revised: May 1985

Ref No.	Page*	Project Title	Year Started	Year Completed	Comments
RM-8		Control Tamarisk at Small Water Sources	1976	1984	
N-17		Study Effects of Feral Burros on Natural Ecosystems	1977	1979	Contract through Cooperative Unit, UNLV
N-9	N-9	Carrying Capacity Study	1977	1980	Results will be put into computer for use.
		Bighorn Sheep Computer Population Model	1981		Continuing - data is annually added and new simulations are being run.
		Food Habits and Food Resources of Bighorn Sheep in the River Mountains	1981		Continuing - should be completed in 1985
W-1	W-1	Ground Water Survey	1975	1982	
N-6	N-6	RBI-Vascular Plants	1974	1977	Contract through Cooperative Unit, UNLV
RM-1	RM-1	River Mountains Bighorn Sheep Banding Study	1975	1977	A one year extension of this project was completed in 1978

*Page refers to page number in original management program, June 1975.

WR-RN

July 3, 1985

REVIEW COMMENTS - Lake Mead Natural Resources Management Plan
Programming Sheets

Proj No.	Project Title ONGOING	Proj Type	RMP Pri	Park Pri	10-237 No.	10-238 No.	Five Year Program Costs (in $1000) and Fund Sources Yr 1 Funded/New	Yr 2 Funded/New	Yr 3 Funded/New	Yr 4 Funded/New	Yr 5 Funded/New
N-20	Off-road Rehabilitation Experimental Project	RES	-	-			8.0(PB) / 0	0 / 0	0 / 0	0 / 0	0 / 0
RM-10	Air Quality Monitoring Lower Colorado Basin	MON	-	-			2.0(PB) / 0	2.0(PB) / 0	2.0(PB) / 0	2.0(PB) / 0	2.0(PB) / 0
	Geographical Inventory System	MIT	-	-			0.5(PB) / 0	0.5(PB) / 0	0 / 0	0 / 0	0 / 0
RM-3	Biological Control of Mosquito Populations	MIT	-	-			0.6(PB) / 0	0 / 0	0.6(PB) / 0	0 / 0	0 / 0
N-3	Analysis of Bighorn Populations and Distribution in LAME *	RES	2	30 / 14	84-37	85-442 ← on 10-238	**5.0(PB) / 0	15.0(PB) / 0	15.0(PB) / 0	10.0(PB) / 0	0 / 0

correct: N-18 on next page is also priority #2

* No funds are requested for this project here, but $10,000 is requested on the 10-237 (85-026), and $75,000 are requested on the 10-238 (85-442). This project should be only on the 10-238 and not on the 10-237 list.

**N-3, The funding for this project has been verbally committed by the Chief Scientist and is shown here as Park Base funding as per that verbal agreement.

NOTES: 1/ Natural Resources project types are: MIT = Mitigation, MON = Monitoring, RES = Research

2/ Fund Sources should be shown in parenthesis after costs as follows: PB = Park Base, RNR - Regionwide Natural Resources Base, NRP = Servicewide Natural Resource Preservation Account, AQ = Servicewide Air Quality Account, AP = Servicewide Acid Precipitation Account, WR = Servicewide Water Resources Account

Proj No.	Project Title PROPOSED	Proj Type	RMP Pri	Park Pri	10-237 No.	10-238 No.	Five Year Program Costs (in $1000) and Fund Sources Yr 1 Funded/New	Yr 2 Funded/New	Yr 3 Funded/New	Yr 4 Funded/New	Yr 5 Funded/New
RM-14	Natural Resources Management Specialist (From Trainee Program)	MIT	1	4	84-31 current		0 / 0	0 / 0	0 / 36.0(PB)	*0	0
	not on 10-237 list with this title. Rather, it is given as "Soil Study" (85-31)										
N-18	Analysis of Tamarisk Beach Encroachment and Recreation Impact	RES	2	35 / 26	84-38	85-443	0 / 12.0(RNR)	0 / 12.0(RNR)	0 / 0	0 / 0	0 / 0
	According to 10-238, But should be on 10-238 only, not on 10-237. It's shown on 10-238, PKG NO. 443 for $42,000. Should not be on 10-237 list.										
N-11	Literature Review of Soils - Phase I	RES	3	36	84-39		0 / 10.0				
RM-11	Burro Removal From Cottonwood Cove and Echo Bay	MIT	4	40	84-46		0 / 0	0 / 20.0	0 / 0	0 / 0	0 / 0
	Belongs on 10-238, not a 10-237.										
RM-12	Construction of Fence and Cattleguard (Echo Bay Airstrip)	MIT	5	61		84-318	0 / 59.6(PB)	0 / 0	0 / 0	0 / 0	0 / 0
	on 10-238 list for $138,360. OR wrong source										
N-4	Basic Ecosystems	MIT	6		84-49		0 / 82.0(RNR)	0 / 82.0(RNR)	0 / 82.0(RNR)	0 / 0	0 / 0
	Belongs on 10-238 List.										
N-21	Geologic Map Compilation	MIT	7	66		84-276	0 / 29.0(RNR)	0 / 40.0(RNR)	0 / 0	0 / 0	0 / 0
	Net Amt. on 10-238 = $22,000										

*RM-14 will become a full time position and for the purposes of this document is only shown in the year the position is received.

NOTES: 1/ Natural Resources project types are: MIT = Mitigation, MON = Monitoring, RES = Research

2/ Fund Sources should be shown in parenthesis after costs as follows: PB = Park Base, RNR - Regionwide Natural Resources Base, NRP = Servicewide Natural Resource Preservation Account, AQ = Servicewide Air Quality Account, AP = Servicewide Acid Precipitation Account, WR = Servicewide Water Resources Account

Proj No.	Project Title PROPOSED	Proj Type	RMP Pri	Park Pri	10-237 No.	10-238 No.	Five Year Program Costs (in $1000) and Fund Sources Yr 1 Funded/New	Yr 2 Funded/New	Yr 3 Funded/New	Yr 4 Funded/New	Yr 5 Funded/New
RM-10	Monitor and Access Air Quality *	MON	8		[Please provide documentation: 10-237 & 10-238 numbers.]		2.0(PB) / 11.0(AQ)	2.0(PB) / 11.0(AQ)	2.0(PB) / 11.0(AQ)	2.0(PB) / 11.0(AQ)	2.0(PB) / 11.0(AQ)
W-2	Monitor and Access Water Quality *	MON	9				2.5(PB) / 47.5(WR)	2.5(PB) / 15.0(WR)	2.5(PB) / 15.0(WR)	2.5(PB) / 15.0(WR)	2.5(PB) / 15.0(WR)
N-22	Wintering Bald Eagle Perch/Roost Survey *	RES	10				0 / 0	0 / 0	5.0(PB / 0	5.0(PB) / 0	5.0(PB) / 0
N-13	Warm Springs Inventory *	RES	11				0 / 10.0(NRP)	0 / 10.0(NRP)	0 / 0	0 / 0	0 / 0
RM-13	Construction of Cattleguard and Fence (Boundary - Newberry Mtns.)	MIT	12	101		84-449	0 / 13.0(PB)	0 / 0	0 / 0	0 / 0	0 / 0
N-7	R.B.I. - Invertebrates *	RES	13				0 / 28.0(RNR)	0 / 28.0(RNR)	0 / 28.0(RNR)	0 / 0	0 / 0
N-8	R.B.I. - Non Vascular *	RES	14				0 / 17.0(RNR)	0 / 17.0(RNR)	0 / 17.0(RNR)	0 / 0	0 / 0
N-10	Study Effects of Grazing on Native Game Species and Plant Communities *	RES	15				0 / 0	0 / 17.0(RNR)	0 / 17.0(RNR)	0 / 0	0 / 0

* No Documentation

NOTES: 1/ Natural Resources project types are: MIT = Mitigation, MON = Monitoring, RES = Research

2/ Fund Sources should be shown in parenthesis after costs as follows: PB = Park Base, RNR - Regionwide Natural Resources Base, NRP = Servicewide Natural Resource Preservation Account, AQ = Servicewide Air Quality Account, AP = Servicewide Acid Precipitation Account, WR = Servicewide Water Resources Account

Proj No.	Project Title PROPOSED	Proj Type	RMP Pri	Park Pri	10-237 No.	10-238 No.	Five Year Program Costs (in $1000) and Fund Sources Yr 1 Funded/New	Yr 2 Funded/New	Yr 3 Funded/New	Yr 4 Funded/New	Yr 5 Funded/New
N-14	Asiatic Clam Ecology *	RES	16		Project Statement to be developed.						
RM-3	Control Puncture Vine *	MIT	17				0 / 11.0(RNR)	0 / 2.5(PB)	0 / 0	0 / 0	0 / 0

* No Documentation

Note: All of the comments on pages 2-5 have been mentioned before in review comments from Dr. Milton Kolipinski (4/12/85) on separate enclosures (also included here for cross reference). Please give attention to these comments and accomplish any necessary changes in preparing next year's Revision.

NOTES: 1/ Natural Resources project types are: MIT = Mitigation, MON = Monitoring, RES = Research

2/ Fund Sources should be shown in parenthesis after costs as follows: PB = Park Base, RNR - Regionwide Natural Resources Base, NRP = Servicewide Natural Resource Preservation Account, AQ = Servicewide Air Quality Account, AP = Servicewide Acid Precipitation Account, WR = Servicewide Water Resources Account

Proj No.	Project Title	Proj Type 1/	RMP Pri	Park Pri	10-237 No.	10-238 No.	Five Year Program Costs (in $1000) and Fund Sources 2/ Yr 1 Funded/New	Yr 2 Funded/New	Yr 3 Funded/New	Yr 4 Funded/New	Yr 5 Funded/New
RM-14	Natural Resources Management Specialist (From Trainee Program)	MIT	1	4	84-		0 / 0	0 / 0	0 / 36.0(PB)	36.0(PB) / 0	36.0(PB) / 0
N-3	Analysis of Bighorn Populations and Distribution in LAME	RES	2	30	84-37 *		5.0(RNR) / 0	0 / 15.0(RNR)	0 / 15.0(RNR)	0 / 10.0(RNR)	0 / 0
N-18	Analysis of Tamarisk Beach Encroachment and Recreation Impact	RES	3	35	84-38 *		0 / 12.0(RNR)	0 / 12.0(RNR)	0 / 0	0 / 0	0 / 0
N-11	Literature Review of Soils - Phase I	RES	4	36	84-39		0 / 10.0				
RM-11	Burro Removal from Cottonwood Cove and Echo Bay	MIT	5	40			0 / 0	0 / 20.0 (NRP)	0 / 0	0 / 0	0 / 0
RM-12	Construction of Fence and Cattleguard (Echo Bay Airstrip)	MIT	6	45	84-318		0 / 59.6(PB)	0 / 0	0 / 0	0 / 0	0 / 0
N-4	Basic Ecosystems	MIT	7		84-		0 / 82.0(RNR)	0 / 82.0(RNR)	0 / 82.0(RNR)	0 / 0	0 / 0

Notes: 1/ Natural Resources project types are: Mit = Mitigation, Mon = Monitoring, Res = Research

2/ Fund Sources should be shown in parenthesis after costs as follows: PB = Park Base, RNR = Regionwide Natural Resources Base, NRP = Servicewide Natural Resource Preservation Account, AQ = Servicewide Air Quality Account, AP = Servicewide Acid Precipitation Account, WR = Servicewide Water Resources Account

* These are not on 10-237 list - however they don't belong on 10-237s list

Proj No.	Project Title	Proj Type	RMP Pri	Park Pri	10-237 No.	10-238 No.	Five Year Program Costs (in $1000) and Fund Sources Yr 1 Funded/New	Yr 2 Funded/New	Yr 3 Funded/New	Yr 4 Funded/New	Yr 5 Funded/New
RM-13	Construction of Cattle-guard and Fence (Boundary - Newberry Mtns.)	MIT	8	87 → There is no #87	84-449		0 / 13.0(PB)	0/0	0/0	0/0	0/0
							Not on priority list				
* RM-10	Monitor and Assess Air Quality	MON	9				2.0(PB) / 11.0(AQ)	2.0(PB) / 11.0(AQ) ↑9.0	2.0(PB) / 11.0(AQ) ↑9.0	2.0(PB) / 11.0(AQ) ↑9.0	2.0(PB) / 11.0(AQ) ↑9.0
							Inconsistent on project statement				
* N-2	Monitor and Assess Water Quality	MON	10				2.5(PB) / 7.5(WR)	2.5(PB) / 15.0(WR)	2.5(PB) / 15.0(WR)	2.5(PB) / 15.0(WR)	2.5(PB) / 15.0(WR)
* N-22	Wintering Bald Eagle Perch/Roost Survey	RES	11				0/0	0/0	5.0(PB) / 0	5.0(PB) / 0	5.0(PB) / 0
* N-13	Warm Springs Inventory	RES	12				0 / 10.0(NRP)	0 / 10.0(NRP)	0/0	0/0	0/0
							22 on 10-238 List for 22.0				
N-21	Geologic Map Compilation	MIT	13	50	84-276		0 / 29.0(RNR)	0 / 40.0(RNR)	0/0	0/0	0/0
* N-7	R.B.I. - Invertebrates	RES	14				0 / 28.0(RNR)	0 / 28.0(RNR)	0 / 28.0(RNR)	0/0	0/0
* N-8	R.B.I. - Non Vascular	RES	15				0 / 17.0(RNR)	0 / 17.0(RNR)	0 / 17.0(RNR)	0/0	0/0

* no documentation

Use footnote to define RNR= , NRP= , etc.
See guidelines in Oct 24, 1984 memo.

Proj No.	Project Title	Proj Type	RMP Pri	Park Pri	10-237 No.	10-238 No.	Five Year Program Costs (in $1000) and Fund Sources Yr 1 Funded/New	Yr 2 Funded/New	Yr 3 Funded/New	Yr 4 Funded/New	Yr 5 Funded/Ne
N-10	Study Effects of Grazing on Native Game Species and Plant Communities	RES	16				0/0	0/17.0(RNR)	0/17.0(RNR)	0/0	0/0
N-14	Asiatic Clam Ecology	RES	17		Project Statement to be developed.						
RM-3	Control Puncture Vine	MIT	18				0/11.0(RNR)	0/2.5(PB)	0/0	0/0	0/0

no documentation